

WHAT IS CLAIMED IS:

1. A roll of laminate for capacitor layer of printed wiring board for withstand voltage inspection, which is obtained by fabricating a laminate web for capacitor layer by sequentially laminating a first electrically conductive  
5 layer formed from a metal foil web, a dielectric layer and a second electrically conductive layer formed from a metal foil web and bonding these layers in a laminated state into one piece, splicing a start end side of the laminate web for capacitor layer to a core tube, and winding the laminate web for capacitor layer up to a terminal end side thereof,  
10 wherein the laminate web for capacitor layer to be spliced to the core tube and wound up thereby is fabricated by laminating "a metal foil web which forms the first electrically conductive layer having a prescribed size," "a metal foil web which forms the second electrically conductive layer having the same size as the first electrically conductive layer," and "a dielectric layer  
15 having a size which is longer by not less than 4 mm in full length than the size of the metal foil webs of the first electrically conductive layer and the second electrically conductive layer" and bonding these layers in a laminated state, the first electrically conductive layer and the second electrically conductive layer being disposed so as to be in a symmetric position via the dielectric layer,  
20 the end face position of the two electrically conductive layers on the start end side and the terminal end side being the same, and the dielectric layer positioned between the first electrically conductive layer and the second electrically conductive layer protruding by not less than 2 mm from the start end side and terminal end side of the first electrically conductive layer and the  
25 second electrically conductive layer, and  
wherein by providing interlayer dielectric means on one side of this laminate web for capacitor layer, an electrical insulation condition is formed

between areas of the laminate web for capacitor layer which overlap each other when the laminate web for capacitor layer is wound in a roll state.

2. A roll of laminate for capacitor layer of printed wiring board for  
5 withstand voltage inspection, which is obtained by fabricating a laminate web  
for capacitor layer by sequentially laminating a first electrically conductive  
layer formed from a metal foil web, a dielectric layer and a second electrically  
conductive layer formed from a metal foil web and bonding these layers in a  
laminated state into one piece, splicing a start end side of the laminate web for  
10 capacitor layer to a core tube, and winding the laminate web for capacitor  
layer up to a terminal end side thereof,

wherein the laminate web for capacitor layer to be spliced to the core  
tube and wound up thereby is fabricated by laminating “a metal foil web  
which forms the first electrically conductive layer having a prescribed size,”  
15 “a metal foil web which forms the second electrically conductive layer having  
the same size as the first electrically conductive layer,” and “a dielectric layer  
having a size which is longer by not less than 4 mm in full length and width  
than the size of the metal foil webs of the first electrically conductive layer  
and the second electrically conductive layer” and bonding these layers in a  
20 laminated state, the first electrically conductive layer and the second  
electrically conductive layer being disposed so as to be in a symmetric  
position via the dielectric layer, the end face position of the two electrically  
conductive layers on the start end side and the terminal end side being the  
same, and the dielectric layer positioned between the first electrically  
25 conductive layer and the second electrically conductive layer protruding by  
not less than 2 mm from peripheral ends of the first electrically conductive  
layer and the second electrically conductive layer, and

wherein by providing interlayer dielectric means on one side of this laminate web for capacitor layer, an electrical insulation condition is formed between areas of the laminate web for capacitor layer which overlap each other when the laminate web for capacitor layer is wound in a roll state.

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3. A roll of laminate for capacitor layer of printed wiring board for withstand voltage inspection, which is obtained by fabricating a laminate web for capacitor layer by sequentially laminating a first electrically conductive layer formed from a metal foil web, a dielectric layer and a second electrically  
10 conductive layer formed from a metal foil web and bonding these layers in a laminated state into one piece, splicing a start end side of the laminate web for capacitor layer to a core tube, and winding the laminate web for capacitor layer up to a terminal end side thereof,

wherein the laminate web for capacitor layer to be spliced to the core  
15 tube and wound up thereby is fabricated by laminating "a metal foil web which forms the first electrically conductive layer having a prescribed size," "a metal foil web which forms the second electrically conductive layer having the same size as the first electrically conductive layer," and "a dielectric layer having a size which is longer by not less than 4 mm in full length and larger  
20 by not less than 2 mm in width than the size of the metal foil webs of the first electrically conductive layer and the second electrically conductive layer" and bonding these layers in a laminated state, the first electrically conductive layer being disposed with respect to the dielectric layer so that one lateral end side of the first electrically conductive layer coincides with one lateral end side  
25 of the dielectric layer and, at the same time, so that the dielectric layer protrudes by not less than 2 mm from the start end side and terminal end side of the first electrically conductive layer, and the second electrically conductive layer being disposed with respect to the dielectric layer so that one lateral end side

of the second electrically conductive layer coincides with the other lateral end side of the dielectric layer and, at the same time, so that the dielectric layer protrudes by not less than 2 mm from the start end side and terminal end side of the second electrically conductive layer, and

5            wherein by providing interlayer dielectric means on one side of this laminate web for capacitor layer, an electrical insulation condition is formed between areas of the laminate web for capacitor layer which overlap each other when the laminate web for capacitor layer is wound in a roll state.

10        4.        A roll of laminate for capacitor layer of printed wiring board for withstand voltage inspection, which is obtained by fabricating a laminate web for capacitor layer by sequentially laminating a first electrically conductive layer formed from a metal foil web, a dielectric layer and a second electrically conductive layer formed from a metal foil web and bonding these layers in a  
15        laminated state into one piece, splicing a start end side of the laminate web for capacitor layer to a core tube, and winding the laminate web for capacitor layer up to a terminal end side thereof,

             wherein the laminate web for capacitor layer to be spliced to the core tube and wound up thereby is fabricated by laminating “a metal foil web  
20        which forms the second electrically conductive layer having a prescribed size,” “a dielectric layer having the same size as the metal foil web of the second electrically conductive layer” and “a metal foil web which forms the first electrically conductive layer having a size which is shorter by not less than 4 mm in length than the size of the metal foil web of the second  
25        electrically conductive layer,” the second electrically conductive layer and the dielectric layer being disposed so that there is no displacement in width and length, and the first electrically conductive layer and the second electrically conductive layer being disposed via the dielectric layer so that a displacement

of not less than 2 mm is produced on the start end side and terminal end side in the longitudinal direction, and

wherein by providing interlayer dielectric means on one side of this laminate web for capacitor layer, an electrical insulation condition is formed  
5 between areas of the laminate web for capacitor layer which overlap each other when the laminate web for capacitor layer is wound in a roll state.

5. A roll of laminate for capacitor layer of printed wiring board for withstand voltage inspection, which is obtained by fabricating a laminate web  
10 for capacitor layer by sequentially laminating a first electrically conductive layer formed from a metal foil web, a dielectric layer and a second electrically conductive layer formed from a metal foil web and bonding these layers in a laminated state into one piece, splicing a start end side of the laminate web for capacitor layer to a core tube, and winding the laminate web for capacitor  
15 layer up to a terminal end side thereof,

wherein the laminate web for capacitor layer to be spliced to the core tube and wound up thereby is fabricated by laminating “a metal foil web which forms the second electrically conductive layer having a prescribed size,” “a dielectric layer having the same size as the metal foil web of the  
20 second electrically conductive layer” and “a metal foil web which forms the first electrically conductive layer having a size which is smaller by not less than 4 mm in length and width than the size of the metal foil web of the second electrically conductive layer,” the second electrically conductive layer and the dielectric layer being disposed so that positions of length and width on  
25 the start end side and terminal end side coincide with each other, the second electrically conductive layer and the dielectric layer being disposed so that the two lateral ends of the second electrically conductive layer and the dielectric protrude by not less than two mm from the two lateral ends of the first

electrically conductive layer and so that the second electrically conductive layer and the dielectric layer protrude by not less than 2 mm from the start end side and terminal end side of the first electrically conductive layer in the longitudinal direction thereof, and

5            wherein by providing interlayer dielectric means on one side of this laminate web for capacitor layer, an electrical insulation condition is formed between areas of the laminate web for capacitor layer which overlap each other when the laminate web for capacitor layer is wound in a roll state.

10        6.        A roll of laminate for capacitor layer of printed wiring board for withstand voltage inspection, which is obtained by fabricating a laminate web for capacitor layer by sequentially laminating a first electrically conductive layer formed from a metal foil web, a dielectric layer and a second electrically conductive layer formed from a metal foil web and bonding these layers in a  
15        laminated state into one piece, splicing a start end side of the laminate web for capacitor layer to a core tube, and winding the laminate web for capacitor layer up to a terminal end side thereof,

             wherein the laminate web for capacitor layer to be spliced to the core tube and wound up thereby is fabricated by laminating “a metal foil web  
20        which forms the second electrically conductive layer having a prescribed size,” “a dielectric layer having the same size as the metal foil web of the second electrically conductive layer” and “a metal foil web which forms the first electrically conductive layer having the same size as the size of the metal foil web of the second electrically conductive layer,” and bonding these layers,  
25        on the start end side and the terminal end side of the laminate for capacitor layer at least any one area selected from an interlayer part between the first electrically conductive layer and the dielectric layer, an interlayer part between the dielectric layer and the second electrically conductive layer and a

part in the interior of the dielectric layer being in an unbonded state and forming a slit, and an interposed state being produced by inserting part of a splice tape in this slit part,

wherein by providing interlayer dielectric means on one side of this  
5 laminate web for capacitor layer, an electrical insulation condition is formed between areas of the laminate web for capacitor layer which overlap each other when the laminate web for capacitor layer is wound in a roll state.

7. A roll of laminate for capacitor layer of printed wiring board for  
10 withstand voltage inspection, which is obtained by fabricating a laminate web for capacitor layer by sequentially laminating a first electrically conductive layer formed from a metal foil web, a dielectric layer and a second electrically conductive layer formed from a metal foil web and bonding these layers in a laminated state into one piece, splicing a start end side of the laminate web for  
15 capacitor layer to a core tube, and winding the laminate web for capacitor layer up to a terminal end side thereof,

wherein the laminate web for capacitor layer to be spliced to the core tube and wound up thereby is fabricated by laminating “a metal foil web which forms the second electrically conductive layer having a prescribed  
20 size,” “a first electrically conductive layer having the same size as the metal foil web of the second electrically conductive layer,” and “a dielectric layer having a size which is larger by not less than 4 mm in width than the size of the metal foil webs of the first electrically conductive layer and the second electrically conductive layer” and bonding these layers, the first electrically  
25 conductive layer and the second electrically conductive layer being disposed so as to be in a symmetric position via the dielectric layer, the end face position of the two electrically conductive layers on the start end side and the terminal end side being the same, the dielectric layer positioned between the

- first electrically conductive layer and the second electrically conductive layer protruding by not less than 2 mm from the start end side and terminal end side of the first electrically conductive layer and the second electrically conductive layer, at least any one area selected from an interlayer part between the first
- 5 electrically conductive layer and the dielectric layer, an interlayer part between the dielectric layer and the second electrically conductive layer and a part in the interior of the dielectric layer being in an unbonded state and forming a slit, and an interposed state being produced by inserting part of a splice tape in this slit part, and
- 10 wherein by providing interlayer dielectric means on one side of this laminate web for capacitor layer, an electrical insulation condition is formed between areas of the laminate web for capacitor layer which overlap each other when the laminate web for capacitor layer is wound in a roll state.
- 15 8. The roll of laminate for capacitor layer of printed wiring board for withstand voltage inspection according to any one of claims 1 to 7, wherein the interlayer dielectric means is an insulating resin layer provided on one side of the laminate web for capacitor layer.
- 20 9. The roll of laminate for capacitor layer of printed wiring board for withstand voltage inspection according to any one of claims 1 to 7, wherein the interlayer dielectric means is an insulating resin film superposed on one side of the laminate web for capacitor layer.
- 25 10. A method of withstand voltage inspection using the roll of laminate for capacitor layer of printed wiring board for withstand voltage inspection according to any one of claims 1 to 9, comprising the steps of:



removing the interlayer dielectric means on the winding terminal side of the laminate web for capacitor layer positioned in the periphery of the roll of laminate web for withstand voltage inspection; and

- bringing a probe electrode to the first electrically conductive layer and
- 5 the second electrically conductive layer in this area and applying a voltage, whereby whether electrical conduction exists along the full length of the laminate web for capacitor layer is checked to make a pass/fail judgment.